Multi-County Goods Movement Action Plan

Riverside County Action Plan

Prepared for:

Los Angeles County Metropolitan Transportation Authority
California Department of Transportation
Orange County Transportation Authority
Riverside County Transportation Commission
San Bernardino Associated Governments
Southern California Association of Governments
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Introduction

Purpose

This report outlines a Goods Movement Action Plan for Riverside County, California, part of a broader Multi-County Goods Movement Action Plan (MCGMAP) developed collectively by the Los Angeles County Metropolitan Transportation Authority (Metro), Orange County Transportation Authority (OCTA), Riverside County Transportation Commission (RCTC), San Bernardino Associated Governments (SANBAG), San Diego Association of Governments (SANDAG), Ventura County Transportation Commission (VCTC), Southern California Association of Governments (SCAG) and the California Department of Transportation (Caltrans). The MCGMAP contains strategies to support the efficient movement of goods without disproportionately impacting local communities, neither the environment nor the transportation network. The MCGMAP is also a regional framework for goods movement initiatives.

This report examines the key issues that impact Riverside County from a goods movement standpoint. It examines the plans and proposals that are being pursued to resolve the stated issues, and new specific actions and strategies that should become a focus for the county. It is important to note that this report builds on a large body of work that has been researched and developed over the past few years, all of which collectively address a comprehensive range of goods movement issues.

The Multi-County Goods Movement Action Plan has recommended four primary action sets for goods movement within the region. The action sets are:

- Action Set 1: Accelerate Regional Environmental Mitigation
- Action Set 2: Relieve Congestion and Increase Mobility
- Action Set 3: Improve Operational Efficiency
- Action Set 4: Develop Equitable Public/ Private Funding Strategy

Current and future projects, relationships, and activities of Riverside County address these four primary action sets. The document concludes with an explanation of how the county's activities support these four action sets.

Other efforts will likely address new and existing issues as they arise. This report is intended to focus on specific actions to address the most significant goods movement issues for the county that have been presented to date. This report is not intended to be a full and complete glossary of every issue.

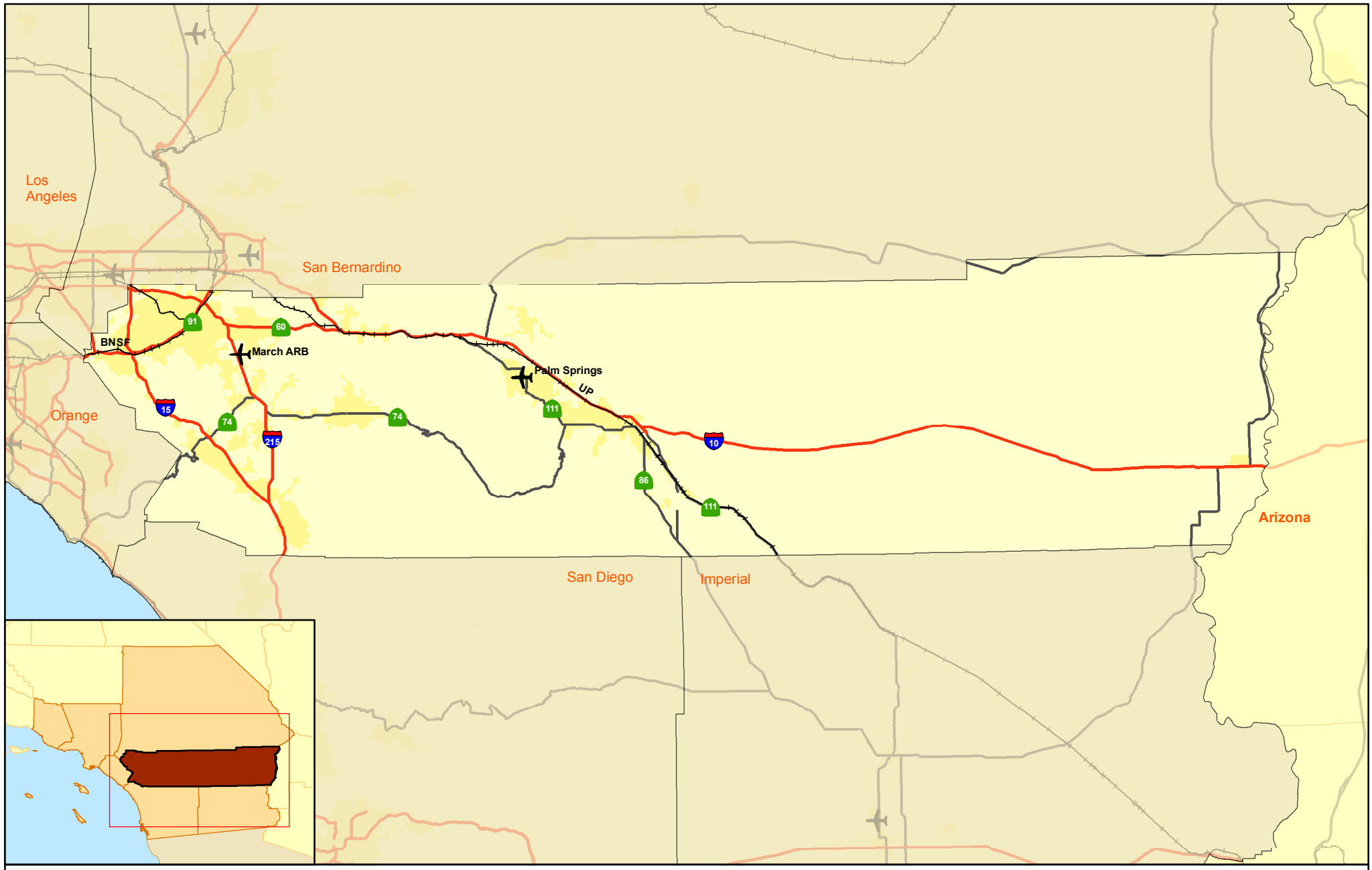
Background

Improving mobility has been a challenge to Riverside County due to rapid population growth and the imbalance of jobs and housing. This has increased commuter traffic between the Inland Empire, Los Angeles and Orange Counties. The growth in goods movement has exacerbated traffic congestion because trucks compete with passenger vehicles for space on roadways. The increase in warehousing and the growth in goods flow for truck and rail will further strain current transportation infrastructure in Riverside County.

Riverside County has participated in a number of goods movement-related studies in the past. These include the following:

- San Bernardino and Riverside County Truck and Recreational Vehicle Count and Analysis Study, March 2004
- SR-91 Alternatives Analysis, January 2003
- SR-60 Truck Lane Feasibility Study, February 2001
- Riverside County Bottom Line Goods Movement Report: Critical Goods Movement Issues for Riverside County, September 2006
- Grade Separation Funding Strategy: A Blueprint for Advancing Projects, September 2006

Figure 1 shows a map of Riverside County with major infrastructure features. Riverside is in the east-central portion of the MCGMAP region. It is bounded on the north by San Bernardino County, on the west by Orange County, and on the south by Imperial and San Diego Counties. Its eastern boundary is Arizona which represents a portion of the eastern MCGMAP region boundary.



Airports
Ports
Railroad
Freeways
Highway
Urban Areas

Multi-County Goods Movement Action Plan
Riverside County

0 15 30 60 Miles

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Sources:
StreetMap 2006

Figure 1

I-10 is the only major interstate highway that exits directly into Arizona.

The major rail operators in the county are the Burlington Northern Santa Fe (BNSF) Railway and the Union Pacific (UP) Railroad. Limited access highways are I-10, I-15, I-215, SR-60 and SR-91. These highways and infrastructure are in the western part of the county. UP's Yuma Subdivision mainline and SR-86 are in the eastern part of the county. SR-86 is federally designated as a NAFTA corridor.

Role

Ports/Airports

The landlocked county has no international border and two major airports. March Global Port is a commercial air cargo and distribution development site located on the south end of the March Air Reserve Base, in western Riverside County. The March Global Port is an air cargo operation recently partnered with DHL in a 16-year operating agreement to run a domestic cargo distribution system. March Global Port consists of a 13,300 foot runway and more than 350 acres of runway-accessible property available for development, which is the longest civilian runway in California. DHL started with six flights a day and is currently flying eight planes per day. The company's plan is to have 12 planes per day including several international flights.

Figure 2
March Global Port

Source: March Global Port LLC., 2006

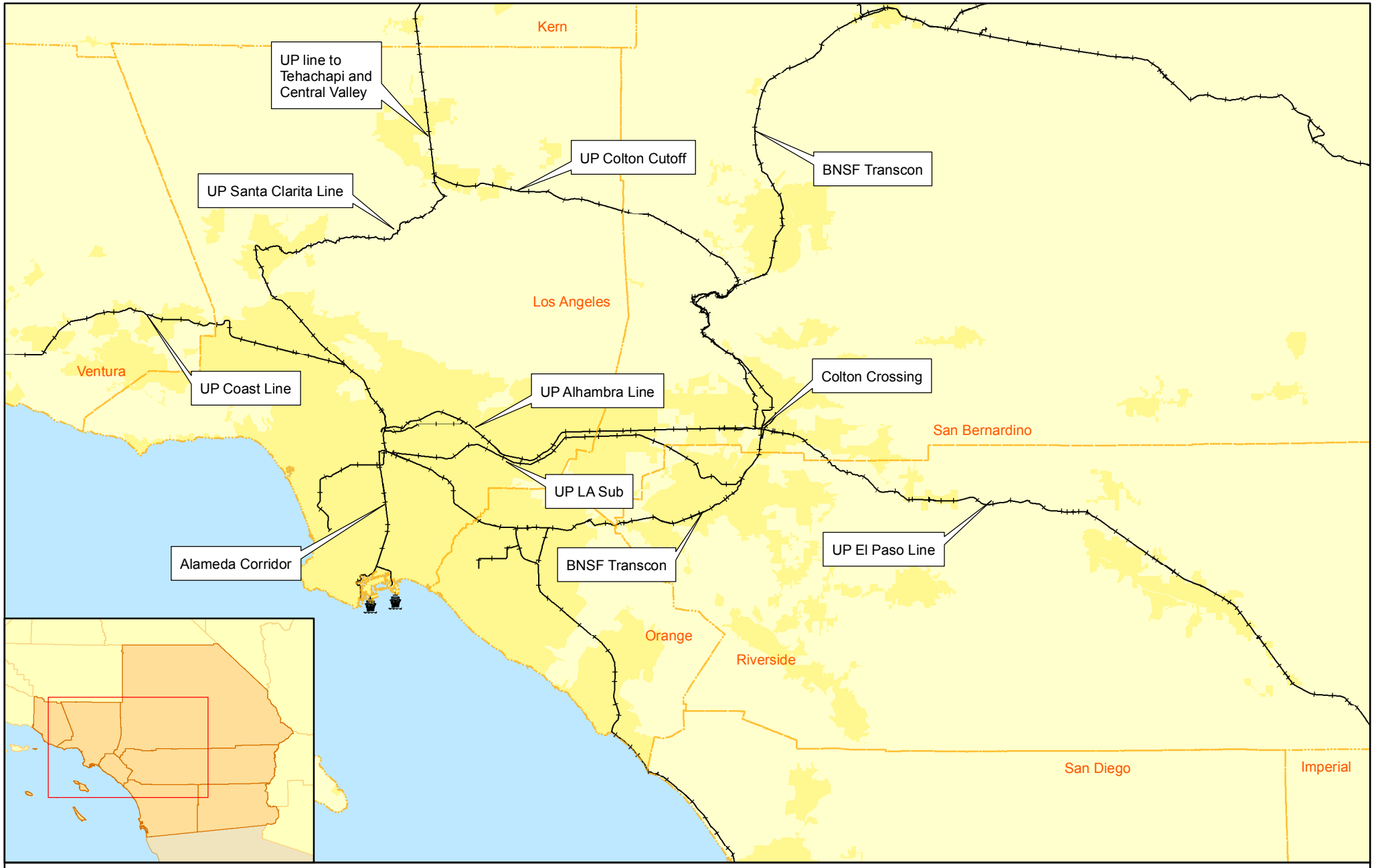
The other major airport in the county is Palm Springs International Airport in Palm Springs, CA, which is home to 14 airlines with 53 daily departures. In 2006, the airport experienced a 7.8 percent increase in passengers.

Rail

The county has three rail mainlines owned by BNSF and UP as shown in Figure 3. These include the BNSF Transcon, the UP Los Angeles Subdivision (UP LA Sub), and the UP El Paso Line. The BNSF Transcon is the artery linking the Los Angeles basin to all midwestern, southwestern and eastern markets on the BNSF rail system. UP LA Sub connects to the Sunset Corridor at Colton in the Los Angeles basin. UP El Paso Line is part of the UP Sunset Corridor which extends to El Paso. This route is designated as the primary intermodal line between the Los Angeles basin and eastern markets.

The UP LA Sub segment of the mainline connects with the UP El Paso Line via the BNSF Transcon Line between west Riverside and Colton. The UP El Paso Line exits south through Imperial County towards Yuma, Arizona, and the eastern side of the Salton Sea. The BNSF Transcon has a route exiting to the north into San Bernardino County. In 2003, 68 million tons of rail freight passed through Riverside County with less than five percent originating or ending locally[1]. Currently 85 freight trains per day pass through Riverside County[2].

[1] Critical Goods Movement Issues for Riverside County, RCTC, September 2006
[2] Alameda Corridor East – Riverside County Impacts and Needs, www.rctc.org



Multi-County Goods Movement Action Plan
Railroad Lines

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Sources:
StreetMap 2006
MCGMAP Tech Memo 3 2006

Figure 3

Metrolink commuter trains provide daily transportation to more than 9,000 passengers from Riverside to Los Angeles and Orange Counties. The Metrolink 91 Line service, from Riverside to Los Angeles via Fullerton, operates on the BNSF Transcon. The Metrolink Riverside Line service, from Riverside to Los Angeles via Pomona, operates on the UP Los Angeles Subdivision.

Currently, UP operates a rail yard and automobile distribution center in Mira Loma. Activities at the yard include receiving inbound rail cars, switching cars, loading and unloading automobiles, departing outbound rail cars, and storing automobiles. Facilities within the yard include classification tracks, a gate complex for inbound and outbound truck traffic, loading and unloading tracks, and various facilities supporting railroad and contractor operations. Domestically manufactured automobiles purchased in the SCAG region are primarily distributed from UP's Mira Loma facility. This facility serves GM, Ford, Chrysler and some foreign manufacturers with production plants in the U.S., such as Isuzu and Toyota. Annual volume at Mira Loma is about 900,000 units and is transported on nearly 70,000 railcars[3].

Almost all freight rail traffic in the county is caused by passing trains. In 2003, three million tons of rail freight moved to or from destinations in the county, and 68 million tons of rail freight passed through the county[4]. The increase in rail freight traffic will have significant implications relating to safety, environmental issues, community impact, financial concerns, and traffic congestion. The county has 61 highway-rail crossings that are not grade-separated. These crossings cause delay for drivers and result in pollution from idling automobiles and trucks.

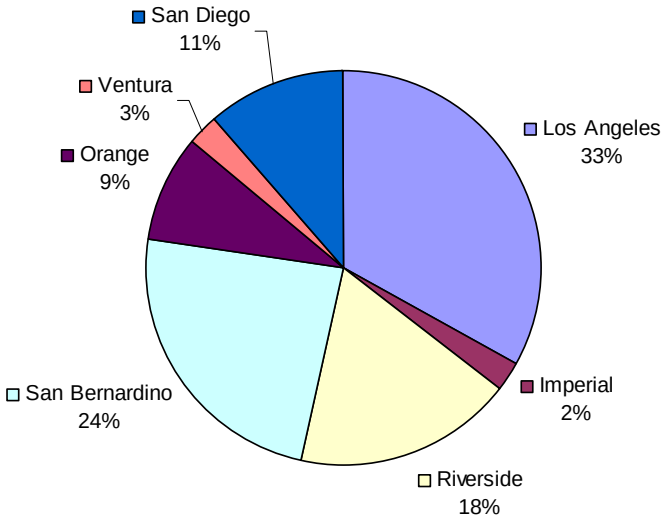
Trucks

Figure 4 depicts the regional distribution of truck traffic by county, measured in truck miles of travel on the state highway system. Riverside County accounts for 18 percent of the total regional truck miles of travel, ranking third after Los Angeles and San Bernardino Counties.

[3] Per Honda North America discussions, 2005.

[4] Critical Goods Movement Issues for Riverside County, RCTC, September 2006

Figure 4
2003 Percentage of Truck VMT in the MCGMAP Study Area by County



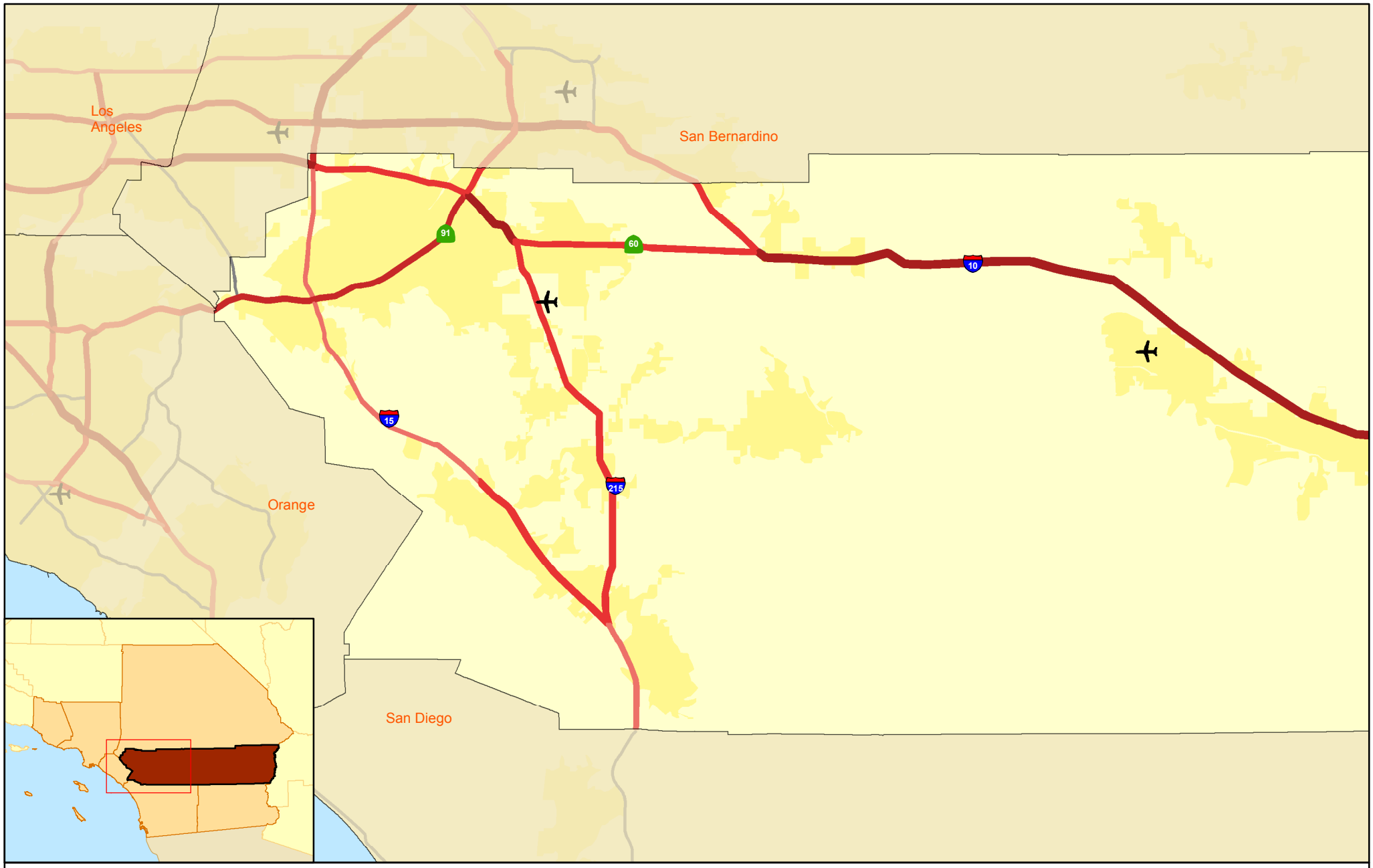
Source: "Truck Miles of Travel: California State Highway System 1988-2003," California Department of Transportation (Caltrans) 2005

Table 1 shows the 2003 truck volumes on the county's freeway segments. Some of the heavily-used truck corridors in the county include SR-91, SR-60, I-15, and I-10 which are shown in Figure 5.

Table 1
Year 2003 Truck ADT

Route	Segments	County	Year 2003 Trucks ADT		Total ADT 2003
			N/E	S/W	
I-15	SR-60 to I-10	San Bernardino/Riverside	8,512	9,446	17,958
I-15	SR-91 to SR-60	Riverside	9,877	8,081	17,958
I-15	SR-74 to SR-91	Riverside	5,946	4,040	9,986
I-215	SR-60 to I-10	Riverside	5,167	5,849	11,016
SR-60	SR-57 to I-15	Riverside	10,771	13,569	24,340
SR-60	I-15 to I-215	Riverside	8,221	6,629	14,850
SR-60	I-215 to I-10	Riverside	6,738	6,072	12,810
SR-91	SR-241 to I-15	Riverside	7,616	9,115	16,731
SR-91	I-15 to I-215	Riverside	7,148	8,001	15,149
I-10	SR-60 to SR-86	Riverside	12,337	11,388	23,725
I-10	SR-86 to SR-78	Riverside	4,590	4,410	9,000
I-10	SR-78 to Arizona State Line	Riverside	4,508	4,692	9,200
SR-86	SR-195 to SR-111	Riverside	967	1,048	2,015

Source: Caltrans, Traffic and Vehicle Data Systems Unit, 2004 Truck; Wilbur Smith Associates, 2007



less than 5000
5000 - 10000
10000 - 15000
15000 - 20000
greater than 20000
Other Freeways

Ports
Airports
Urban Areas

Multi-County Goods Movement Action Plan
2003 Truck ADT

0 10 20 40 Miles

N

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Sources:
StreetMap 2006
SCAG 2004
WSA 2006

Figure 5

In 2003, 104 million tons of goods were shipped through Riverside County and 35 percent (36 million tons) was shipped via trucks. Table 2 shows the truck tons handled by the county's freeway network. These figures do not include local pick-up and delivery.

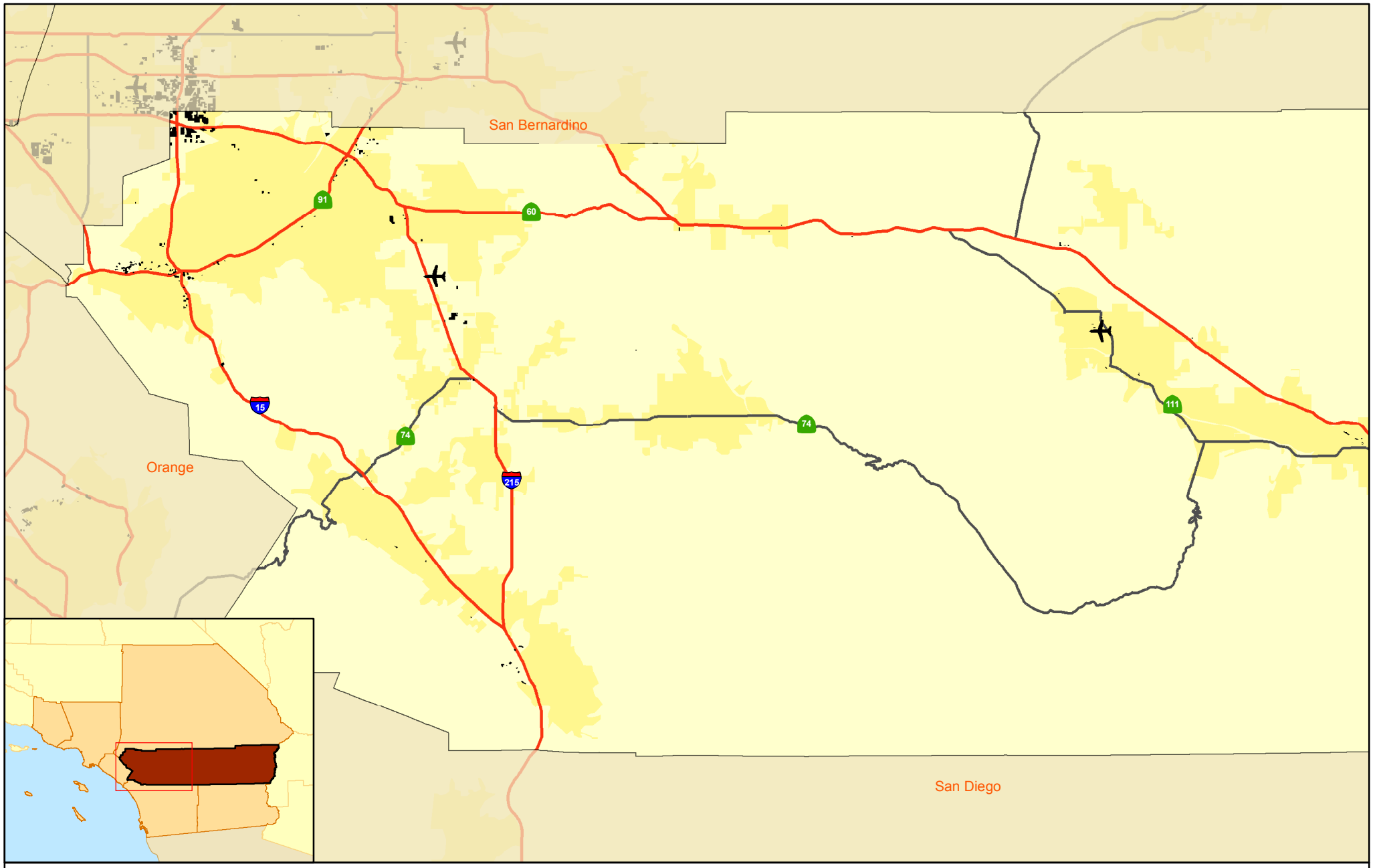
Table 2
Truck Tons Handled by Riverside County's Freeway Network, 2003

	Truck Tons (Million)
Truck tons through County	36.3
Inbound Truck tons to freight facilities	8.4
Outbound Truck tons from freight facilities	5.1
Subtotal	49.8
Truck tons to or from a final origin or destination	58.5
Total Truck Tons	109.4

Source: Critical Goods Movement Issues for Riverside County, RCTC, September 2006

Warehousing

Figure 6 shows the location of warehouse facilities in Riverside County. As the map indicates, there is a large concentration of warehouses centered near the I-15 between San Bernardino and Riverside Counties. There are also many warehouses along SR-91 between SR-71 and I-15.



Airports
Ports
Freeways
Highway
Urban Areas
Wholesaling/Warehousing

Multi-County Goods Movement Action Plan
Warehouse Land Use

0 5 10 20 Miles

N

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Sources:
StreetMap 2006
SCAG 2000 Land Use

Figure 6

The Inland Empire (essentially defined as San Bernardino and Riverside Counties) has an especially strong warehouse and industrial market. This area is attractive to warehousing and distribution centers because it has land available for large (one million plus SF) facilities. Such areas are increasingly rare in counties to the west of the Inland Empire.

Development of new warehousing and distribution centers is spreading from the west end of the county. The types and sizes of warehouses include large private and contract warehouses, as well as distribution centers. These facilities tend to range from 500,000 SF to 1.7 million SF. As land becomes scarcer in Los Angeles, large new facilities are being constructed farther east in cities such as Moreno Valley, Fontana, Perris, and along I-15 toward Las Vegas.

Table 3 below illustrates a summary of warehouse and industrial space in this area.

Table 3
Summary of Warehouse and Industrial Space within the Inland Empire

Market	Net Rentable Area (SF)	Vacancy Rate %	SF Net Absorption	SF Under Construction	Avg. Asking Lease Rate/SF	Availability Rate %
Inland Empire East[i]	93,228,068	2.1%	2,332,258	12,758,664	$0.42	5.0%
Inland Empire West[ii]	209,641,170	1.8%	3,193,453	9,074,069	$0.37	5.7%
TOTAL – Inland Empire	302,869,238	1.9%	5,525,711	21,832,733	$0.39	5.5%

Source: NAIOP/CBRE 3Q2005
Notes:
[i] Inland Empire east include Rialto, San Bernardino, Redlands, Colton, Riverside, Corona, Moreno Valley and Perris.
[ii] Inland Empire west includes Rancho Cucamonga, Ontario, Chino, Mira Loma and Fontana

County Specific Issues

The county has indicated a number of key goods movement issues. In general, these deal with air quality, grade crossings, congestion, passenger capacity, distribution locations, and funding.

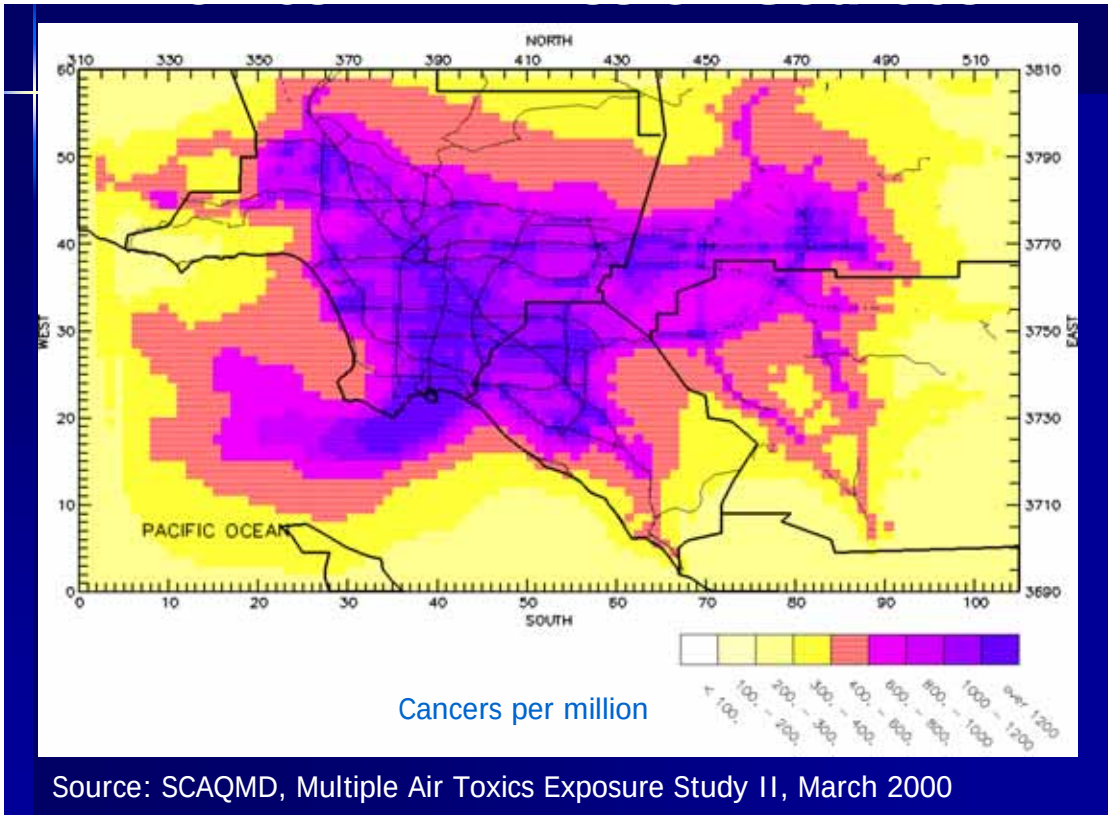
Air Quality

Negative Impacts to air quality in Riverside County are generated from emission sources to the west, as well as sources internal to the county. Prevailing winds carry the airborne pollution into the county. A primary concern is the community's well-being and the environmental effects of poor air quality. Goods movement emissions are a significant source of pollution in the study area.

The goods movement industry is heavily dependent upon diesel fuel for mobility and operations. As discussed in Tech Memo 5b, diesel fuel results in the emissions of diesel particulate matter (DPM), which has been identified as a toxic air contaminant (TAC) by the state's Office of Environmental Health Hazard Assessment (OEHHA). Diesel fuel is also a significant contributor of nitrogen oxides (NOx), the primary pollutant for ozone formation. Both DPM and NOx are linked to various health issues for susceptible populations like the young and the elderly; as well as cancer, asthma, preterm births and low birth weight babies. Due to the current dependency of the goods movement industry on diesel fuel, this action plan focuses on emission reduction.

Figure 7 displays the cancer risk from airborne toxics with diesel emissions. The largest impact is predominantly in the western regions of the county.

Figure 7
Cancer Risk from Airborne Toxics with Diesel Emissions



Source: SCAQMD, Multiple Air Toxics Exposure Study II, March 2000

The goods movement mobile sources targeted for emission reduction include Ocean Going Vessels (OGVs, or ships), On-Road Heavy-Duty Vehicles (HDVs, or trucks), Cargo Handling Equipment (CHE), Harbor Craft (HC), and Railroad Locomotives (RL).

Grade Crossings

Train volumes are expected to increase due to projected volume increases at the ports of Los Angeles and Long Beach. BNSF estimates that the number of trains operating between west Riverside and Colton (the BNSF Transcon segment shared with the UP) will increase 37 percent by 2010. Currently, 85 freight trains pass through the county every day. By the year 2020, this number is expected to increase to 169[5]. Delays to daily through traffic caused by freight trains are a major concern to the county.

The 61 at-grade Alameda Corridor-East (ACE) crossings cause conflicts between rail and highway traffic and are located on mainlines of the UP and the BNSF Transcon railroads. The average rail crossing gate can be down for as long as two hours a day. In total, at-grade crossings delay Riverside County motorists 603 hours daily. This extra idling time is estimated to generate 45 tons of additional pollutants annually[6].

There are plans for grade separations in the Alameda Corridor-East Trade Corridor. Table 4 shows a grade separation project list that was updated in April 2006. The priority groups (1-5) indicated in the table below was identified with help from multiple jurisdictions. Factors including safety, delay, noise, and emissions were considered.

Table 4
Grade Separation Project List

Rail Line	Cross Street	Jurisdiction	Priority Group
UP (LA SUB)	Jurupa Road	Riverside County	1
BNSF & UP (SB SUB)	Chicago Ave	Riverside	1
BNSF (SB SUB)	Magnolia Ave	Riverside County	1
BNSF & UP (SB SUB)	3rd Street	Riverside	1
BNSF (SB SUB)	McKinley Street	Corona	1
BNSF & UP (SB SUB)	Columbia Ave (BNSF)	Riverside	1
UP (LA SUB)	Magnolia Ave	Riverside	1
UP (El Paso)	Sunset Ave	Banning	1
UP (LA SUB)	Riverside Ave	Riverside	1
BNSF & UP (SB SUB)	Iowa Ave (BNSF)	Riverside	1
BNSF (SB SUB)	Adams Street	Riverside	1
BNSF (SB SUB)	Auto Center Dr	Corona	2
UP (El Paso)	Hargrave Street	Banning	2

[5] Alameda Corridor East – Riverside County Impacts and Needs, www.rctc.org
[6] Ibid

Table 4
Grade Separation Project List

Rail Line	Cross Street	Jurisdiction	Priority Group
UP (LA SUB)	Clay Street	Riverside County	2
BNSF (SB SUB)	Smith Ave	Corona	2
BNSF & UP (SB SUB)	7th Street	Riverside	2
BNSF (SB SUB)	Tyler Street	Riverside	2
UP (El Paso)	22nd Street	Banning	2
UP (El Paso)	Ave 48/Dillon Road	Indio/Coachella	2
BNSF & UP (SB SUB)	Center Street	Riverside County	2
UP (El Paso)	San Gorgonio Ave	Banning	2
UP (LA SUB)	Streeter Ave	Riverside	2
UP (LA SUB)	Jurupa Ave	Riverside	2
BNSF & UP (SB SUB)	Palmyrita Ave (UP)	Riverside	2
BNSF & UP (SB SUB)	Spruce Street (BNSF)	Riverside	2
BNSF (SB SUB)	Madison Street	Riverside	2
UP (LA SUB)	Brockton Ave	Riverside	2
BNSF (SB SUB)	Mary Street	Riverside	2
BNSF (SB SUB)	Pierce Street	Riverside	3
UP (El Paso)	Ave 62	Riverside County	3
BNSF (SB SUB)	Railroad Street	Corona	3
UP (LA SUB)	Panorama Road	Riverside	3
BNSF (SB SUB)	Buchanan Street	Riverside	3
UP (LA SUB)	Bellgrave Ave	Riverside County	3
UP (El Paso)	Ave 66	Riverside County	3
UP (LA SUB)	Palm Ave	Riverside	3
UP (El Paso)	Ave 52	Coachella	3
UP (El Paso)	California Ave	Beaumont	3
UP (El Paso)	San Timoteo Canyon Road	Calimesa	3
BNSF (SB SUB)	Washington Street	Riverside	4
UP (El Paso)	Apache Trail	Riverside County	4
UP (LA SUB)	Rutile Street	Riverside County	4
BNSF (SB SUB)	Jefferson Street	Riverside	4
BNSF & UP (RIV)	Cridge Street	Riverside	4
UP (El Paso)	Viele Ave	Beaumont	4
BNSF (SB SUB)	Cota Street	Corona	4
UP (El Paso)	Broadway	Riverside County	4
UP (LA SUB)	Mountain View Ave	Riverside	4
UP (El Paso)	Airport Drive	Riverside County	4
BNSF & UP (SB SUB)	Main Street	Riverside County	4
BNSF (SB SUB)	Jackson Street	Riverside	4
UP (El Paso)	Pennsylvania Ave	Beaumont	4
BNSF (SB SUB)	Joy Street	Corona	4

Table 4
Grade Separation Project List

Rail Line	Cross Street	Jurisdiction	Priority Group
BNSF (SB SUB)	Harrison Street	Riverside	4
UP (El Paso)	Tipton Road	Palm Springs	4
BNSF (SB SUB)	Radio Road	Corona	5
BNSF (SB SUB)	Jane Street	Riverside	5
UP (El Paso)	Ave 54	Coachella	5
UP (El Paso)	Ave 58	Riverside County	5
BNSF (SB SUB)	Sheridan Street	Corona	5
BNSF (SB SUB)	Gibson Street	Riverside	5

Source: RCTC ACE Trade Corridor Grade Crossing Separation Need List, April 2006

Vehicle Congestion

Congestion was classified as a critically important issue by representatives of Riverside County agencies in a survey conducted for the MCGMAP.

Table 5 provides forecasts of truck volumes in 2030 derived from model runs conducted by SCAG.

Table 5
Year 2003 and Year 2030 Truck Volumes Derived from Model Runs

Route	Segments	SCAG Model 2003 Truck Volume	SCAG Model 2030 Truck Volume	Percent Change in Daily Truck Volume
I-215	SR-60 to I-10	8,193	20,070	145%
SR-60	SR-57 to I-15	19,548	27,634	41%
SR-60	I-15 to I-215	11,117	19,744	78%
SR-91	I-15 to I-215	11,449	24,319	112%
SR-91	SR-241 to I-15	22,320	48,154	116%
I-15	SR-60 to I-10	11,912	20,228	70%
I-15	SR-91 to SR-60	10,666	17,519	64%
I-15	SR-74 to SR-91	11,009	22,093	101%
SR-86	SR-195 to SR-111	7,231	6,871	-5%

Source: SCAG 2007 Draft Air Quality Management Plan, Wilbur Smith Associates, 2006

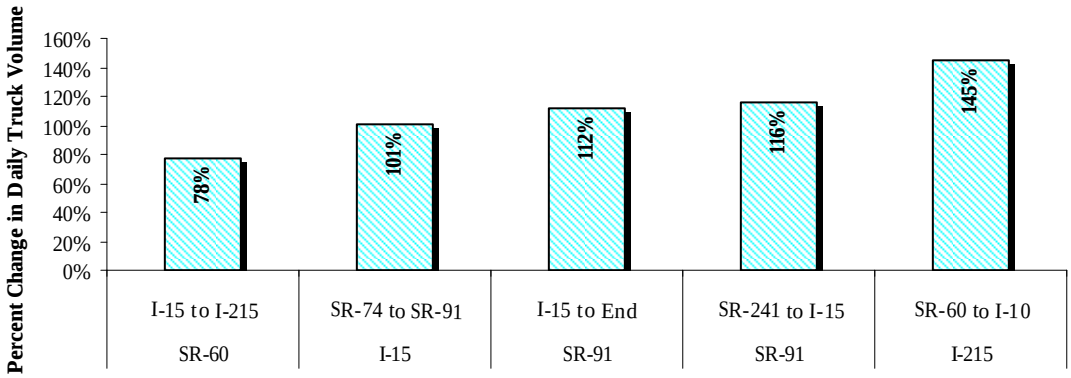
The following can be summarized from the above table:

- I-215 from SR-60 to I-10 shows an increase of 145 percent from 8,000 in 2003 to more than 20,000 daily volumes by 2030

- By 2030, the daily truck volumes on SR-60 between I-15 and I-215 show an increase of more than 75 percent from 11,000 in 2003 to about 20,000
- Truck volumes on SR-91 from I-15 to I-215 and SR-241 to I-15 increase to more than 100 percent by 2030
- I-15 will experience significant increase in truck volumes between SR-74 and SR-91, an increase of more than 100 percent

Figure 8 displays truck growth of more than 75 percent for freeway segments in Riverside County between 2003 and 2030.

Figure 8
Truck Growth 2003-2030



Source: SCAG 2007 Draft Air Quality Management Plan, Wilbur Smith Associates, 2006

Table 6 compares the truck volumes on the region's highway system projected for the Year 2030. The table below helps determine potential differences in future forecast volumes due to changes in existing volumes.

Table 6
Forecast Truck Volumes on Region's Highway System

		SCAG Model 2030 Trucks		Post-Processed Year 2030 Trucks	
Route	Segments	N/E	S/W	N/E	S/W
I-15	SR-60 to I-10	10,572	9,656	13,438	12,836
I-15	SR-91 to SR-60	10,163	7,357	9,787	7,053
I-15	SR-74 to SR-91	14,194	7,899	13,584	7,485
I-215	SR-60 to I-10	9,936	10,134	11,260	11,634
SR-60	SR-57 to I-15	12,740	14,894	14,860	17,565
SR-60	I-15 to I-215	8,796	10,948	10,862	12,615
SR-91	SR-241 to I-15	22,131	26,023	19,587	22,978
SR-91	I-15 to I-215	11,310	13,009	13,055	14,963

Source: SCAG 2007 Draft Air Quality Management Plan, Wilbur Smith Associates, 2006

Table 6 shows that the SCAG model carries lower truck volumes on I-215, SR-60, SR-91 and I-15. This indicates that SCAG forecasts are based on lower truck volumes than actually exist when compared to existing data.

As shown in the County Project List in Table 7, a number of freeway improvement projects are planned within Riverside County for corridors along I-10, I-15, SR-86, and SR-60. The projects range in scale from the widening of on/off-ramps along SR-60 and the addition of various auxiliary lanes along each corridor, to the construction of a new interchange at the intersection of I-10 and SR-60. There are 31 projects in Riverside County dealing with freeway and roadway improvements, listed below.

Table 7
MCGMAP Projects Riverside County

Category	County	Description	Cost ($Millions)
Truck Lanes/Dedicated Freight Guideway System	RIV	I-10 from San Bernardino County Line (R0.0) to Banning city limits (12.9) - Add eastbound truck climbing lane.	$75.0
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	On I-10 at & E/O Apache Trail - Construct new Morongo Pkwy IC (4 lns, ramps - 2 lns), construct aux lane, widen apache trail 3 to 5 lns, widen seminole dr 2 to 5 lns (ea: oa650g).	

Table 7
MCGMAP Projects Riverside County

Category	County	Description	Cost ($Millions)
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	On I-10 near Rancho Mirage from 1.5 km east to 0.9 km west of Ramon Rd IC - Construct Bob Hope Dr extension (6 lanes) with a new diamond IC plus modify Ramon Rd IC and ramps.	
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	I-10 from Calimesa @ County Line Rd (R4.0) to 500 meters e/o Sandlwood Dr I/C (R4.3) - Replace Bridge, Ramps, Construct Auxiliary Lanes, and Realign Calimesa Rd. (EA 0A710K).	$60.0
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	I-10 at Ave 50 - Construct new interchange.	$19.5
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	I-10 McNaughton Pkwy (approx. 3.38 mi e/o Dillon Rd) - Construct interchange.	$20.0
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	I-10 at Portola Ave between Dinah Shore & Varner - Construct new IC (4 lanes) and ramps incl. bridge over UPRR & Varner realignment.	$19.8
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	I-10 at Monterey Ave - Reconfigure IC, add 1 NB lane, construct new WB entry loop ramp from Monterey & WB entry ramp from Varner, realign/relocate WB exit ramp.	$4.3
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	At I-15/Weirick Road IC in Corona - Widen ramps 1 to 2 lanes, widen Weirick Road 2 to 4 lanes from Temescal Canyon Rd. to I-15, and install signals at ramps/Weirick Rd.	
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	I-15/cajalco road, widen Cajalco rd i/c widen 2 to 4 lns from Temescal Canyon Rd to Bedford Canyon Rd and widen ramps 1 to 2 lanes.	
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	At I-15/El Cerrito Rd IC in Corona - Widen on/off ramps 1 to 2 lanes, widen 2 to 4 lanes El Cerrito Rd between ramps, install signals, realign Bedford Canyon Rd and add soundwalls.	
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	On I-15 at Ontario Ave, widen SB off & NB on ramps 2 to 3 lns, & widen Ontario 4 to 6 lns (Compton Ave to State St) & install signals.	
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	In Riverside County at I-15/Limonite Ave IC - widen ic 4 to 6 lns, ramps 1 to 2 lns, & widen Limonite Ave from Hamner to Wineville 4 to 6 lns (approx 1 mi).	
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	At I-15 and Clinton Keith Road widen overcrossing from 2 to 4 lns and widen ramps from 1 to 2 lns.	

Table 7
MCGMAP Projects Riverside County

Category	County	Description	Cost ($Millions)
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	SR-86 S at Ave 50 - Construct interchange.	$9.3
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	SR-86 S at Ave 52 btwn La Hernandez and Polk - Construct new interchange.	$19.7
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	SR-86 at Ave 54 btwn SR-111 & Fillmore - Construct bridge/interchange w new SR-86.	$11.2
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	SR-86 S at Airport Blvd/Ave 56 btwn Orange & Fillmore - Construct new interchange (Spread-Diamond).	$17.8
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	SR-86S/Airport Blvd. (Ave. 56) construct new IC (three lanes OC: 1 lane each direction + 1 median lane) and ramps (1 lane) from approx. Desert Cactus Dr. Ave. 57.	$27.8
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	SR-86 S at SR-195 (Avenue 66) R10.63/R11.43 - Near Mecca, construct new interchange.	$19.4
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	SR-86 S Tyler St w/o SR-86S Tyler St e/o SR-86S - Construct new interchange.	$19.0
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	SR-60 at Etiwanda Ave btwn San Sevaine Wy & Iberia St - Widen ramps 1 to 2 lanes. 0.1 mi.	$0.2
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	SR-60 from 0.4 mi e/o I-15/SR-60 IC to 0.2 mi e/o Main St - Add auxiliary lanes both directions.	$5.0
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	On I-10 at Indian Ave near Palm Springs - Widen overcrossing 2 to 6 lns from 20th Ave North of I-10 & Garnet ave South of I-10 & ramps 1 to 2 lns (tea21-#377) (ea# 45570).	
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	On I-10 at Date Palm IC in Cathedral City - Widen overcrossing from 2 to 6 lns and ramps from 1 to 2 lns.	
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	At I-10 and Jefferson St IC, modify/widen existing IC from 2 to 6 lanes.	
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	I-10 from Monterey Ave (44.5) to Dillon Rd (58.9) - Add 1 MF lane each direction (EA 0A030K).	$71.0

Table 7
MCGMAP Projects Riverside County

Category	County	Description	Cost ($Millions)
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	I-10/SR-60 New interchange construction	$100.0
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	SR-60/10 Truck Climbing Lane	$55.3
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	SR-60 at Milliken Ave between Etiwanda Ave & Wineville Rd - Widen ramps 1 to 2 lanes. 0.1 mi.	$0.1
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	March Inland Cargo Port Airport I-215/Van Buren Blvd Ground Access Improvement Project.	$97.6
Grade Separations	RIV	Grade Separations	$1,048.0
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	SR-86 NAFTA Corridor Interchange Construction	$150.0
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	SR-60 Construct Truck Climbing Lane through Badlands to I-10	$114.0
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	I-215 Widening to San Bernardino County Line	$1,600.0
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	SR-91 Widening to SR-241 to Pierce	$1,000.0
Freight Corridor Capacity Enhancement and Operational Improvements	RIV	I-10 Riverside County Line to SR-60	$200.0

Source: Wilbur Smith Associates, 2007

Mainline Rail Capacity

According to the 2002 Los Angeles-Inland Empire Railroad Mainline study, there were 57 daily BNSF trains between Riverside and Colton in the year 2000. The table below shows that BNSF freight traffic could increase by over 100 percent (121 daily trains by 2025) on the same segment. Including UP freight trains and passenger train volumes (Amtrak and Metrolink), total daily trains will increase 69 percent from 103 in 2000 to 174 in 2025. Figure 9 shows the increase in rail freight volumes by the year 2025.

Table 8
Peak-Day Rail Traffic for 2025
(Number of Trains per Day by Segment)

	Atwood-Riverside	Riverside-Colton
BNSF through freight	121	121
Passenger	62	36
UP through freight	--	17
Year 2025 Total	183	174

Source: "The Los Angeles-Inland Empire Railroad Mainline Advanced Planning Study", Los Angeles County Economic Development Corporation (LAEDC), 2002.
Note: UP volume between Riverside and Colton on the BNSF was updated to 73 trains in the 2005 "Inland Empire Railroad Mainline Study Final Report", prepared for the Southern California Association of Governments (SCAG). Accordingly, total daily trains would reach 230 in 2025 on that segment.

Multi-County Goods Movement Action Plan
2025 Forecast Rail Freight Volume

Sources:
StreetMap 2006
WSA 2006

ENGINEERS PLANNERS ECONOMISTS
WilburSmith ASSOCIATES

Figure 9

Multi-County Goods Movement Action Plan
2025 Forecast Rail Volume

Sources:
StreetMap 2006
WSA 2006

ENGINEERS PLANNERS ECONOMISTS
WilburSmith ASSOCIATES

Figure 10

UP plans to reroute the Riverside – Los Angeles commuter train service to the Alhambra Line at Pomona. The Riverside Metrolink service presently operates to Los Angeles on the LA Sub Line. In addition, UP would shift many of the freight trains now operating to Riverside on the LA Sub Line to the Alhambra Line at Pomona. These changes would create a freight-only route, and a mixed freight/passenger route, greatly increasing operational efficiency for UP. None of these changes are budgeted and the reroute of Metrolink trains will require a new agreement with the commuter train agency.[7]

These operational changes would improve operational efficiency. Passenger service improvements would serve to maintain regional economic vitality by providing better access to Los Angeles employment centers.

Distribution Locations

Currently, UP operates a rail yard and automobile distribution center in Mira Loma. Activities at the yard include receiving inbound rail cars, switching cars, loading and unloading automobiles, departing outbound rail cars, and storing automobiles. Facilities within the yard include classification tracks, a gate complex for inbound and outbound truck traffic, loading and unloading tracks, and various buildings and facilities supporting railroad and contractor operations.

Community groups and residents have expressed concern over the diesel emissions created by the yard and its proximity to the Jurupa Valley High School. The yard does represent a major intermodal facility. Total passenger and freight train movements for the UP Los Angeles Sub Line from Mira Loma to West Riverside are presented in Table 9.

Table 9
Total Passenger and Freight Train Movements

Line Segment	Freight Total Through Train Movements per Peak Day (Year 2000)	Passenger Total Through Train Movements per Peak Day (Year 2000)
BNSF Hobart – Fullerton Jct.	50	46
BNSF Fullerton Jct. – Atwood	50	5
BNSF Atwood – West Riverside	57	16
BNSF/UP West Riverside – Colton	92	11
BNSF/UP Colton – San Bernardino	121	11
Lines over Cajon Pass (including BNSF/UP Cajon Line and UP Palmdale Line)	93	2
UP Mira Loma – W. Riverside plus	64	14
UP West Colton – Colton UP El Paso Line	2	2

Source: Inland Empire Railroad Mainline Study, Final Report, June 30, 2005.

[7] UPRR 2001 Presentation to SCAG

There are no projects in the MCGMAP region that directly relate to the Mira Loma facility. Any improvements to land use and pollution concerns would address the Action Set "Accelerate Regional Environmental Mitigation."

Increasing cargo capacity at March GlobalPort should assist the Action Set "Improve Operational Efficiency." March GlobalPort can handle more than 1.2 million tons of cargo per year, which is about 14 percent of the regional volume and 20 percent of the international volume predicted for 2016[8].

Funding

The county has developed various funding strategies for advancing projects.

The need for grade separation funding is particularly acute. The existing 61 railroad crossings were ranked into five priority tiers, out of which 28 crossings were ranked in the top two tiers as the highest priority for funding. The cost of constructing grade separations at these 28 locations is currently estimated at $815.8 million, with $199 million currently committed from various funding sources. This results in $616.8 million of funding deficit for all 28 projects. A plan to fund 18 of the 28 crossings for a total project cost of $560.8 million is underway. Among the 18 high-priority projects, eight are located on UP mainline tracks and 10 are on BNSF mainline tracks (five of which UP operates). The table below lists the 18 high-priority projects.

[8]March Global Port LLC., 2006

Table 10
High Priority Grade Separation Projects

Cross Street	Jurisdiction	Total Project Cost (Millions)	Priority Group
Columbia Ave (BNSF&UP)	Riverside	$21.00	1
Sunset Ave (UP)	Banning	$21.00	1
Avenue 48/Dillon Road (UP)	Indio/Coachella	$16.10	2
Jurupa Ave (UP)	Riverside County	$21.70	2
Chicago Ave (BNSF &UP)	Riverside	$48.70	1
Magnolia Ave (BNSF)	Riverside County	$26.70	1
3rd Street (BNSF & UP)	Riverside	$31.70	1
McKinley Street (BNSF)	Corona	$109.20	1
Magnolia Ave (UP)	Riverside	$27.20	1
Iowa Ave (BNSF & UP)	Riverside	$19.00	1
Adams Street (BNSF)	Riverside	$24.00	1
Auto Center Dr (BNSF)	Corona	$27.00	2
Clay Street (UP)	Riverside County	$25.00	2
Center Street (BNSF & UP)	Riverside County	$36.30	2
Streeter Ave (UP)	Riverside	$33.70	2
Madison Street (BNSF)	Riverside	$19.00	2
Jurupa Road (UP)	Riverside County	$26.50	1
Riverside Ave (UP)	Riverside	$27.00	1
Total		$560.80	

Source: Grade Separation Funding Strategy, RCTC, September, 2006

Representatives from the Riverside County Transportation Commission have suggested adopting funding strategies similar to the Chicago Region Environmental and Transportation Efficiency (CREATE) Program. The CREATE Program is a partnership between the state of Illinois, city of Chicago, Metra (a Commuter Rail System in Chicago) and the nation's freight railroads. CREATE is a multi-modal program (freight rail, passenger rail and highway) to provide critical improvements to increase efficiency of rail infrastructure and quality of life for Chicago-area residents. A similar coordination of governmental and private agencies within Riverside County could be employed in a holistic approach to address critical rail projects.

To address the CREATE Program, the Federal Highway Administration (FHWA) Illinois Division Office, in cooperation with the Illinois Department of Transportation and the Chicago Department of Transportation, developed the Systematic, Project Expediting, and Environmental Decision-making (SPEED) Strategy. The SPEED Strategy supports systematic decision-making, provides an expeditious method of moving low risk component projects forward, and assesses potential environmental impacts in a proportional, graduated way.

Market-based mechanisms are currently being considered by different agencies to fund infrastructure and environmental improvement at ports. One such mechanism is a container fee

applied to each shipping container received at the port. This would generate funds to help pay for road and rail improvements and clean-air programs tied to port trade.

One important potential source of funding is State General Obligation bonds from Proposition 1B, which was approved by California voters in November of 2006. The Trade Corridor Infrastructure Fund (TCIF) within Proposition 1B is intended to fund "Trade Corridors of National Significance" and other corridors with high volumes of freight movement. Prop 1B requires the County Transportation Commission (CTC) to use plans adopted by regional transportation planning agencies, including MCGMAP. Funding issues and county plans address the MCGMAP Action Set "Negotiate Fair Share Public/Private Financing."

County Actions

County actions related to the MCGMAP are provided in Table 8. A major focus in Riverside County is to "Relieve Congestion and Increase Mobility."

Conclusions

Riverside County plays a major role in moving goods through the MCGMAP region. Goods movement related impacts are currently disproportionately higher than benefits seen by the county at this time. As a result, the region has identified several major impact mitigation strategies as regional priority projects.

Freight rail through traffic is an especially high priority problem in the region. Delays at grade crossings are significant, and competition between freight trains and commuter trains for limited rail capacity has a significant effect on county residents. Air pollution impacts from growing freight rail also need to be addressed.

Riverside County has relatively high truck volumes on major east-west facilities. The county has a higher fraction of heavy-truck traffic than most of the other MCGMAP counties. If current trends continue, growth in warehouse and distribution land uses (and associated economic benefits) are likely to favor the I-15 corridor in San Bernardino County as compared to Moreno Valley. Thus, Riverside County may benefit less from logistics activity in the region than its share of through traffic would suggest possible.

Based on the above observations, several high priority regional projects are targeted for Riverside County. The projects and actions currently underway or being planned in Riverside County fall within the four actions of the MCGMAP. There is a relationship between county projects developed independent of a regional plan and the recommended primary actions of the MCGMAP. To reiterate, the four action sets in the MCGMAP include the following:

- Action Set 1: Accelerate Regional Environmental Mitigation
- Action Set 2: Relieve Congestion and Increase Mobility

- Action Set 3: Improve Operational Efficiency
- Action Set 4: Develop Equitable Public/ Private Funding Strategy

A brief description of each action set and how the county-specific actions serve their greater purpose is provided below.

Action Set 1: Accelerate Regional Environmental Mitigation seeks to mitigate environmental impacts at three levels: a broad regional approach, regional conformity, and project specific mitigation. The regional approach is for broad strategic policies and efforts focusing on further reducing region-wide impacts. Regional conformity holds emissions to caps set through aggressive actions and implementing high-level technology and best practices. The project specific mitigation requires project sponsors to consider and disclose environmental impacts when planning projects and to address how potential impacts will be resolved. This part of the project development process is specified in the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA).

Freeway lane and capacity improvements as well as operational and safety improvements will improve mobility and therefore reduce emissions. The proposed grade separation projects will also greatly reduce pollution from idling cars. These projects will assist Riverside County in continuing to meet conformity goals. Projects may have local impacts that are not addressed within this regional goods movement framework.

Action Set 2: Relieve Congestion and Increase Mobility focuses on improving all aspects of the transportation system to improve region-wide mobility and safety. This action set seeks to achieve the following:

- Increase intermodal lift capacity
- Increase mainline rail capacity
- Grade separate railroad crossings
- Improve highways through comprehensive and innovative approaches
- Continue with general purpose highway improvements / safety and operational improvements

The freeway projects, the mainline rail improvements, and the intermodal facilities will provide congestion relief and increase mobility. All modes of freight transport benefit from these projects. The construction of railroad grade separations will help reduce traffic delay at crossings.

Action Set 3: Improve Operational Efficiency addresses the following action categories:

- Improve marine terminal productivity, truck turn times, and intermodal operations
- Improve highway operations through the use of new technology

These improvements would make existing infrastructure more efficient. Projects like improving freeway capacity and grade separations lead to improved operational efficiency.

Action Set 4: Develop Equitable Public/Private Funding Strategy recognizes that implementation of the actions, projects, and programs with mitigations will require a coordinated effort by private and public sectors. The action set seeks to achieve the following:

- Maximize the Study Area's Fair Share of State and Federal Funds
- Identify Opportunities for Project-Specific User Fees
- Establish Institutional Structure for Managing User Fees and Revenues
- Initiate Supportive Legislation

Riverside County is addressing these issues. Developing funding strategies for grade separations is a major step in addressing the distribution of funds. To adequately address fair share, it is important to increase the knowledge of agencies regarding the issues as this study has done.

All the projects in the county ultimately are designed to insure that Southern California maintains, if not enhances, its economic position. Maintenance of the regions economic vitality will be enhanced by the actions being done in Riverside County.